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ABSTRACT

Research on classroom reading practices reveals a heavy emphasis on teacher monitoring and management of materials. Little evidence exists of teacher explanation in reading, and little is known about the qualitative dimensions of such instruction. With this in mind, a study was designed to provide descriptions of explanations used by effective teachers. Subjects were four second grade reading teachers and their low reading groups. Each teacher was observed intensively throughout one school year and frequent interviews were conducted with both the teachers and their students. Both the instruction provided in the reading groups and the interviews were analyzed using descriptive techniques. The analysis revealed six components of effective explanation in reading instruction: (1) effective management, (2) the ability to reorder basal lesson format, (3) the use of statements on skill usefulness, (4) specificity, (5) consistency of explanation, and (6) the ability to provide elaborative explanation during turn taking sessions. (Copies of evaluation forms used in the study are appended.) (Author/FL)

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DIRECT TEACHER EXPLANATION DURING READING INSTRUCTION: A PILOT STUDY

Laura R. Roehler, Gerald G. Duffy,
Cassandra Book, and Roy Wesselman

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Abstract

Research on classroom reading practices reveals a heavy emphasis on teacher monitoring and management of materials. Little evidence exists of teacher explanation in reading and little is known about the qualitative dimensions of such instruction. This study was designed to provide descriptions of the explanations used by effective teachers. Four teachers were studied. Each teacher was observed intensively throughout the year and frequent interviews were conducted of both the teachers and their pupils. Both the instruction provided in the reading groups and the various interviews were analyzed using descriptive techniques. The authors found six components of effective explanation in reading instruction: (1) effective management, (2) ability to reorder basal lesson format, (3) statement of why it is useful to learn the skill being taught, (4) specificity, (5) consistency across explanations, and (6) ability to provide elaborative explanation during turn-taking sessions. They state implications of these findings for classroom instruction and further research.

DIRECT TEACHER EXPLANATION DURING READING INSTRUCTION: A PILOT STUDY[1]

Laura R. Roehler, Gerald G. Duffy, Cassandra Book, and Roy Wesselman[2]

In recent years, much has been learned about effective teaching (Brophy, 1979; Duffy, 1981), about instructional strategies for developing comprehension (Pearson, in press), and about how teachers influence what is learned (Brophy, 1982). However, little is known about teacher explanatory talk during reading instruction. As a result, teacher educators cannot teach teachers about the forms of teacher explanation; about how to generate the metaphors, analogies, and models that help link new learning to the existing cognitive structures of students; or about how to respond verbally to student misunderstanding. The study reported here focuses on such instructional techniques. In a general sense, we want to answer the teacher's question, "How can I say it to them so they'll do better." More specifically, we want to determine (1) whether explicit teacher explanation of reading skills results in greater student awareness and achievement and (2) what the characteristics of explicit teacher explanation are.

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[1]This is a revision of a paper presented at the National Reading Conference, Clearwater, Florida, December 1982.

[2]Laura R. Roehler and Gerald G. Duffy coordinate the Teacher Explanation Project, and Cassandra Book and Roy Wesselman are researchers with that project. Roehler is an associate professor of teacher education, Duffy is a professor of teacher education, Book is an assistant dean and an associate professor of teacher education, and Wesselman is an associate professor of teacher education in MSU's College of Education.

Background

This study is part of a program of research designed to discover what teachers can say during instruction to improve student reading outcomes. The original stimuli for the research were process-product studies of teacher effectiveness and the resulting concept of direct instruction, which Rosenshine (1976, 1979) characterized as essentially a matter of creating opportunity to learn by generating engagement on academic tasks. We, however, took the position that classroom teaching is more than opportunity to learn (Roehler & Duffy, 1981). A subsequent qualitative study (Duffy, Roehler, & Reinsmoen, Note 1) suggested that engagement is a prerequisite to effective instruction, and that beyond this foundational level, a crucial variable in instructional effectiveness is the explicitness of a teacher's verbal explanations to students.

At about the same time, Anderson (in press), in a study of students' responses to reading seatwork, noted that some low-group first-grade students demonstrated little cognitive awareness regarding seatwork, apparently because their teachers seldom gave explicit directions about the cognitive processes to use.

The pilot study reported here was a natural next step. It was designed to determine whether teachers who provide explicit explanation about the cognitive processing involved in reading elicit greater awareness of that processing in low-group students and, ultimately, increase their reading achievement.

This research is based on certain assumptions about reading curricula and about instruction that ought to be clarified at the outset.

First, our concept of reading curricula focuses more on skills (or process factors) than on the content of what is read. The importance of this distinction is stated by Pearson (in press):

> Process factors are comparable to what are called control procedures in computer processing. They refer to *how* data are processed instead of *what* data are processed. To discuss them in a paragraph separate from content factors may seem to imply that I think they are separate from and independent of content factors. To the contrary I know of no data base that would allow us to determine the independence of content (data) and process (control) factors. Process factors may be but different facets of the same amalgam under consideration when content factors are discussed. (p. 223)

While Pearson argues that content and process may be indistinguishable, we argue that skills embody the process governing how reading works, that low-group students must be aware of these skills so that reading does not remain an arbitrary and mysterious task, and that the linkages between using skills and understanding content ought to be made explicit for such students. Hence, in contrast to projects that focus on the interpretation of a story content, such as the Kamehameha Early Education Program (Tharp, 1982) and the research of scholars such as Beck (Beck, Omanson, & McKeown, 1982), we examine the reading skills used in interpreting stories. As such, we agree with Collins and Smith (Note 2):

> We do not argue that reading curricula should not stress interpretation. We argue only that a reading curriculum should also try to teach how to construct interpretations. . . If we do not teach these skills, then the better students will develop them on their own, and the worse readers will find reading very frustrating. (p. 28)

Second, we believe a relationship exists between student awareness and student achievement: Student reading achievement is higher if students are aware of how reading skills work, how particular skills can be used to solve particular problems encountered in real text, and the mental processing employed when solving these problems. Consequently, it is not enough that

students master a skill in the sense of meeting a performance criterion. They must also know how, when they encounter a disruption in reading, to activate a metacognitive awareness of both the nature of the disruption and the skill(s) they can use to resolve the difficulty so they can quickly return to smooth automatic processing. This consciousness puts students in control of the reading process, allowing them to read with confidence and ease.

Third, we believe instruction requires more than placing low-group students in conducive environments, expecting them to discover for themselves the processes of reading; it requires more than guiding their discovery by asking questions about content. Instead, we believe that a proactive, as opposed to an indirect, approach has the greatest potential for success. By proactive, we mean that teachers are themselves consciously aware of the function of the skills being taught and the linkages between these skills and the content to be processed, that they analyze a skill and identify the salient features of the mental processing one does when employing it, and that they actively teach students how to do the processing. This active role puts a premium on pedagogical maneuvering during instruction, particularly the teacher's declarative (as opposed to interrogative) statements, the clarity with which these are said, and the assistance devices used to make the message as clear as possible.

This view of instruction has much in common with Vygotsky's (see Wertsch, 1979) theory of cognitive development through gradual internalization. At first, an adult or adult-like person controls and guides the child's learning, particularly in what Vygotsky calls the "zone of proximal development," that level of development immediately beyond the child's current level. Gradually, the child is moved from other-regulation to self-regulation. Our concept of proactive instruction of reading skills is similar in that the teacher is

responsible for providing other-regulated information about skills in the student's "zone of proximal development." The teacher is active in early stages of other-regulation, engaging in pedagogical maneuvering designed to link the information being taught with the student's existing cognitive structures regarding how one gets meaning from the printed page. The teacher diminishes assistance, encourages self-regulation, and looks for internalization of the process as the student begins to respond successfully.

Finally, we do not believe that such proactive instruction is a stable entity or procedure that can be scripted, packaged, or otherwise established entirely in advance. While a plan is helpful, the pedagogical maneuvering with which we are concerned also calls for verbal explanation in response to situations that arise during the lesson. As such, it requires an understanding not only of how to initially present new information, but of how students restructure information and of how to reshape and elaborate on explanations in response to such restructuring.

Design of Study

The pilot study consisted of four case studies of second-grade teachers teaching low reading groups. The case studies were quantitative in that we measured (1) the extent to which teachers engaged in explicit instructional explanation; (2) the students' awareness of what they had learned, how to do it, and why it was useful; and (3) student achievement, both before and after instruction, on the passage comprehension subtest of the *Woodcock Reading Mastery Test*. The case studies were qualitative in that they included descriptive observation, audio transcripts of lessons taught, and interviews with teachers. The following questions were asked:

1. Is there a relationship between the explicitness of a teacher's explanation in reading and the low-group students' awareness of and achievement in what was taught?

2. What are the characteristics of explicit explanation?

Procedures

School administrators provided a list of second-grade teachers who had low reading groups, and these teachers were asked to participate in the study. One female and two male teachers (Teachers A, B, and C) from a mid-western university town volunteered. They identified an additional second-grade classroom in each of their buildings having low reading groups that could serve as a control. A fourth female teacher (Teacher D), from a rural community, also agreed to be studied but could not supply a control classroom. Thus, the treatment group was four teachers and their low reading group students. There were three control groups.

Students in each of the treatment and control groups were administered Form A of the passage comprehension subtest of the *Woodcock Reading Mastery Test* at the beginning of the study. Teachers in the treatment group then conducted a reading lesson with their low groups, which the researchers audiotaped and described using timed field notes. After the lesson, the low-group students were individually asked the following three questions: "What were you learning to do in the lesson the teacher just taught?" "How do you do it?" and "When would you use this skill again?" Following the student interviews, the teacher was interviewed to determine his/her view of the lesson's purpose. Following the initial observation, researchers met with each teacher. They described explicit explanation behavior, provided a handout with an illustration of the component parts of explicit explanation, distributed a checklist for use in evaluating explanations, and provided a critique of the

previous lesson. The teacher was instructed to incorporate the components of explicit explanation into subsequent lessons.

This process of lesson observation, student interview, teacher interview, and intervention with the teacher regarding the explicitness of his/her explanation behavior was repeated five more times over a period of three months for Teachers A, B, and C and of six months for Teacher D. After the sixth observation, students in both the treatment and control groups were tested with ' rm B of the passage comprehension subtest of the *Woodcock Reading Mastery Test*.

Data Analysis

Rating forms were devised for judging the explicitness of teacher explanation. To obtain reliability, we rated sample lessons together, agreed on conventions, and rated additional sample lessons independently until we achieved identical ratings on each criterion for a given sample lesson. The rating form included two parts (see Appendix A). The first focused on the information the teacher provided, with the teacher's talk rated 0, 1, or 2, depending on the clarity and consistency of the information about (a) the mental process, (b) why the mental process would be useful in connected text, (c) the salient features of the task and how one uses these features to do the mental processing, (d) the sequence for approaching and fulfilling the mental process, and (e) an example of how to do the mental processing. The second focused on the means the teacher used to explain the skill, with the teacher's talk rated 0, 1, or 2 on (a) the degree to which the teacher modeled, (b) the extent to which the teacher directed the students' attention, (c) the way the teacher responded to students' answers during the lesson, (d) the extent to which the teacher reviewed with the students, (e) the appropriateness of the practice provided by the teacher and (f) the degree to which the teacher

helped the students apply the skill in connected text, (e.g., basal text stories). Thus the highest possible explicitness-of-explanation score for each lesson was 22.

A similar procedure was used to develop a rating form for judging student awareness (see Appendix B). A scale was developed in which students received a rating of 0, 1, 2, 3, or 4 depending upon the student's statement (a) of what was taught, (b) about why the skill would be useful, and (c) of how s/he would do the skill. Thus the highest possible score for student awareness was 12.

At the conclusion of the study, the following quantitative analyses were conducted:

1. The scale for rating explicitness of teacher explanation was applied to the six lessons for each of the four intervention teachers, and scores were obtained.

2. The scale for rating student awareness was applied to the interview responses of four students selected at random from the low reading groups in each of the four intervention classrooms, and scores were obtained.

3. Both the Form A and Form B administrations of the passage comprehension subtest of the *Woodcock Reading Mastery Test* were scored for low reading groups in the four intervention classrooms and the three control classrooms.

4. To measure the impact of teacher explicitness, a MANOVA[3] analysis was conducted using the awareness ratings of each teacher's low-group students averaged over the six lessons and their pre- and posttest achievement scores on the *Woodcock Reading Mastery Test*.

After the quantitative results were obtained, the transcribed audiotapes of the six lessons taught by each of the four intervention teachers were qualitatively analyzed to identify the characteristics of explicit explanation. To do so, lessons that received high ratings were compared with lessons

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[3]A MANOVA is a multivariant analysis of covariance. It was used to detect the effects of teacher differences on posttest student achievement measures, controlling for pretest and student awareness scores.

that received low ratings, contrastive examples of explanatory teacher talk were identified, and descriptive statements were generated regarding the critical differences between these.

Findings

The findings are reported in two categories: quantitative and qualitative.

Quantitative Findings

The teacher-explanation ratings, student awareness ratings, and achievement test growth are reported on a teacher-by-teacher basis.

Teacher A's explicitness-of-explanation ratings are shown in Figure 1. Note that the ratings across all six lessons are low to moderate and that student awareness ratings are also low to moderate. There appears to be a relationship between explicitness-of-explanation ratings and student-awareness ratings: The most highly rated student responses occur in the same lessons as the most highly rated explanations. The achievement scores on the *Woodcock Reading Mastery Test* for Teacher A's low-group students indicated an average growth of +.75, compared to a regression of -.1 for the control group.

In contrast to Teacher A, Teacher B received consistently high ratings for the explicitness of his explanation in Lessons 2-6, and his low-group students received consistently high awareness ratings in these lessons (see Figure 2). Again, there appears to be a relationship between explicit-explanation ratings and student-awareness ratings in that student scores are high when explanation is high and low when explanation is low. In this classroom, the average achievement growth on the *Woodcock Reading Mastery Test* was +1.0 for Teacher B's low reading group and +.3 for the control group.

Teacher C received consistently low ratings for the explicitness of his explanation, and his students received consistently low ratings for their

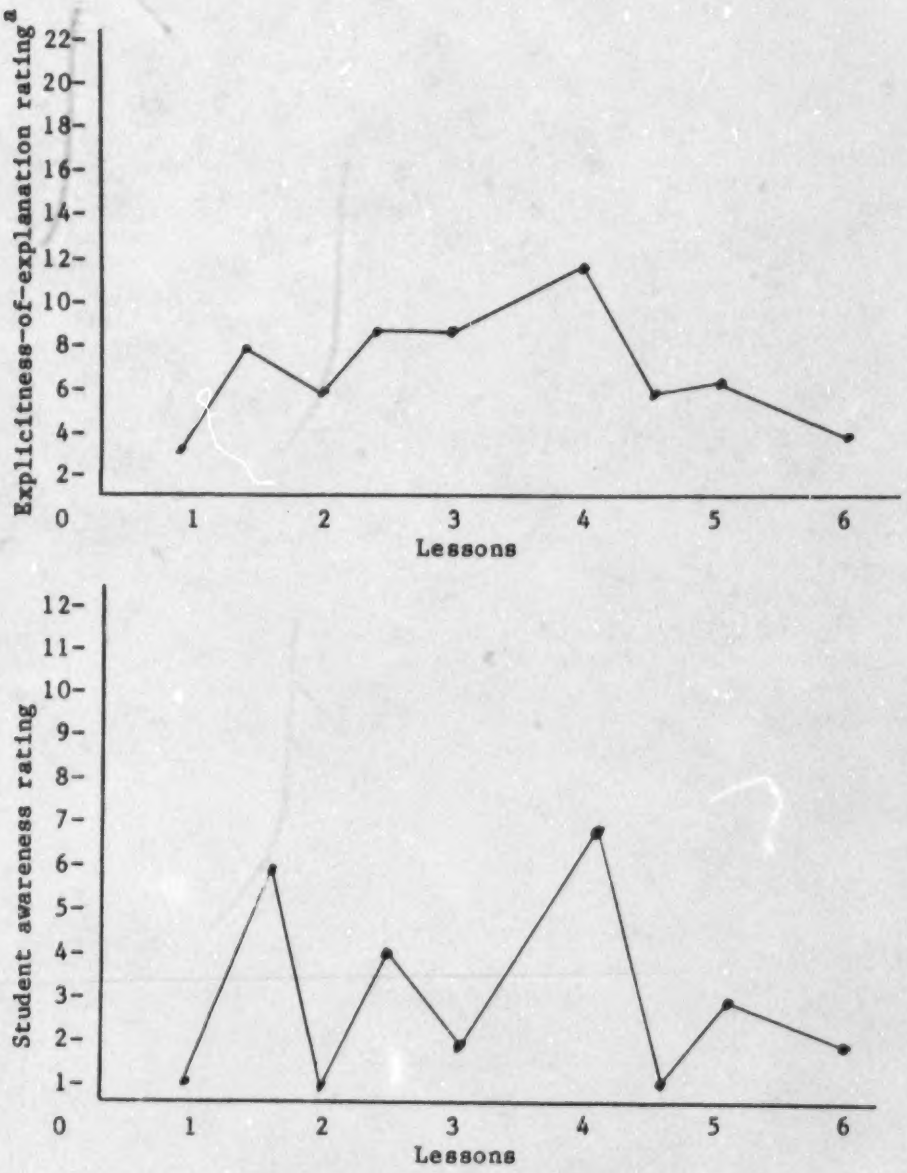

Figure 1. Teacher A's ratings for explicitness of explanation and student awareness

[a]Teacher A has two scores for Lessons 1, 2, and 5 because she taught two skills during each of those periods of observation.

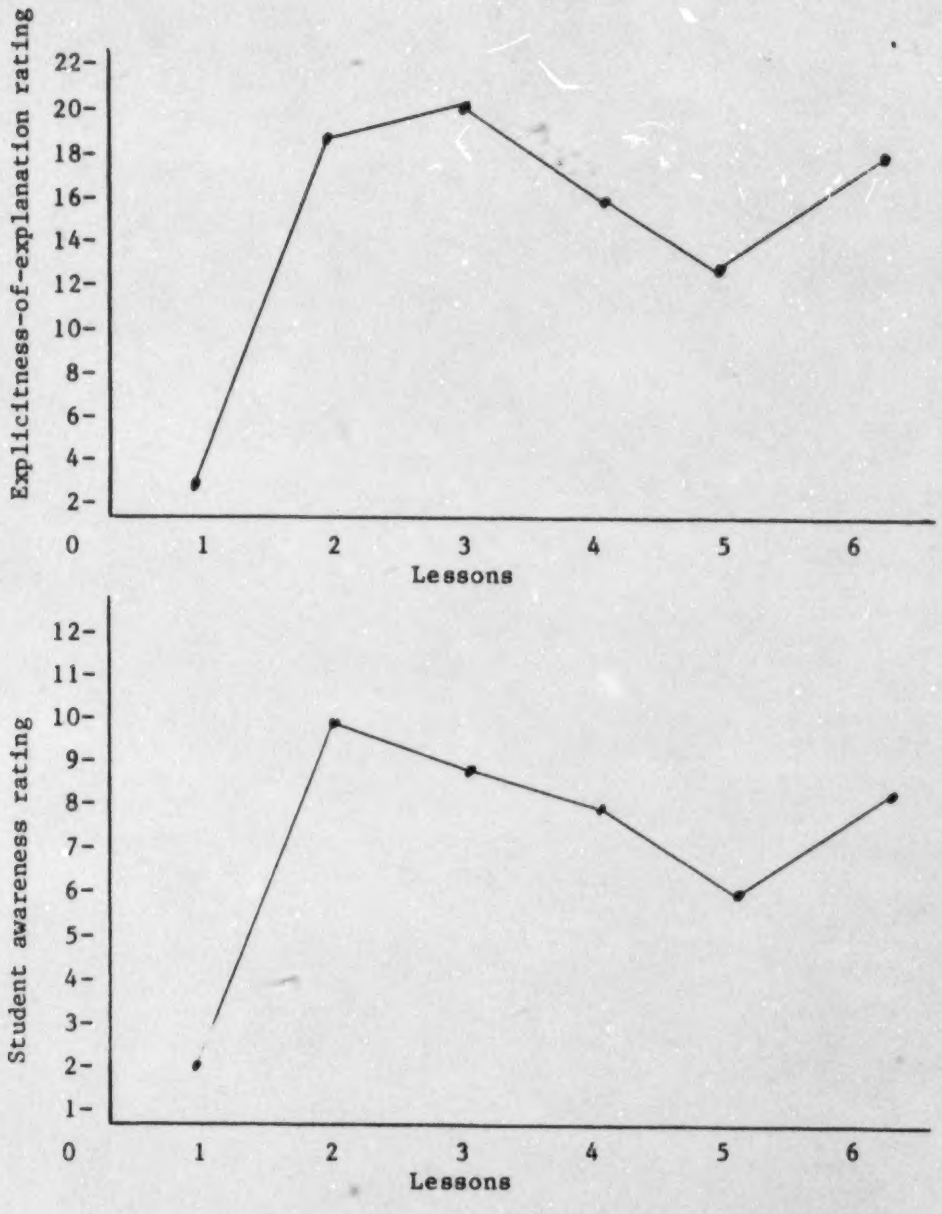

Figure 2. Teacher B's ratings for explicitness of explanation and student awareness.

awareness (see Figure 3). However, when Teacher C received a relatively high rating for explicitness of explanation for one lesson (Lesson 3), the student-awareness ratings were also relatively high. The average achievement growth of the low-group students in Teacher C's classroom was +.2, while the growth of the control-group students was +.7.

Though Teacher D's explicitness ratings were low in Lessons 1 and 2, they improved steadily in Lessons 3-6 (see Figure 4). Student awareness was rated low in the first two lessons and improved in the last four lessons. Again, the most highly rated student responses correspond with the lesson that received the highest rating for explicitness of explanation (Lesson 4). The average achievement growth on the *Woodcock Reading Mastery Test* for Teacher D's low-group students was +.9. There was no control group for Teacher D.

After scoring the achievement tests and rating the lessons and the students' responses to interviews, a MANOVA was done to determine whether there were differences in the teachers' explanations as reflected in student awareness and achievement outcomes (see Table 1). The dependent measures were the students' pretest and posttest scores on the *Woodcock Reading Mastery Test* and their awareness score averaged over the six lessons; the independent variables were the four intervention teachers, each with an averaged rating of explicit explanation. The average awareness ratings for Teacher B's low reading group were significantly higher (.05) than the average ratings of the low-group students of Teachers A, C, or D. In addition, a comparison of Teacher B's instruction with Teacher D's indicated an independent effect for awareness on the posttest *Woodcock Reading Mastery Test* achievement score when controlling for the pretest, although this was not found when Teacher B's students were compared with those of Teacher A or Teacher C. While this effect could be accounted for by several variables (such as school district differences), the

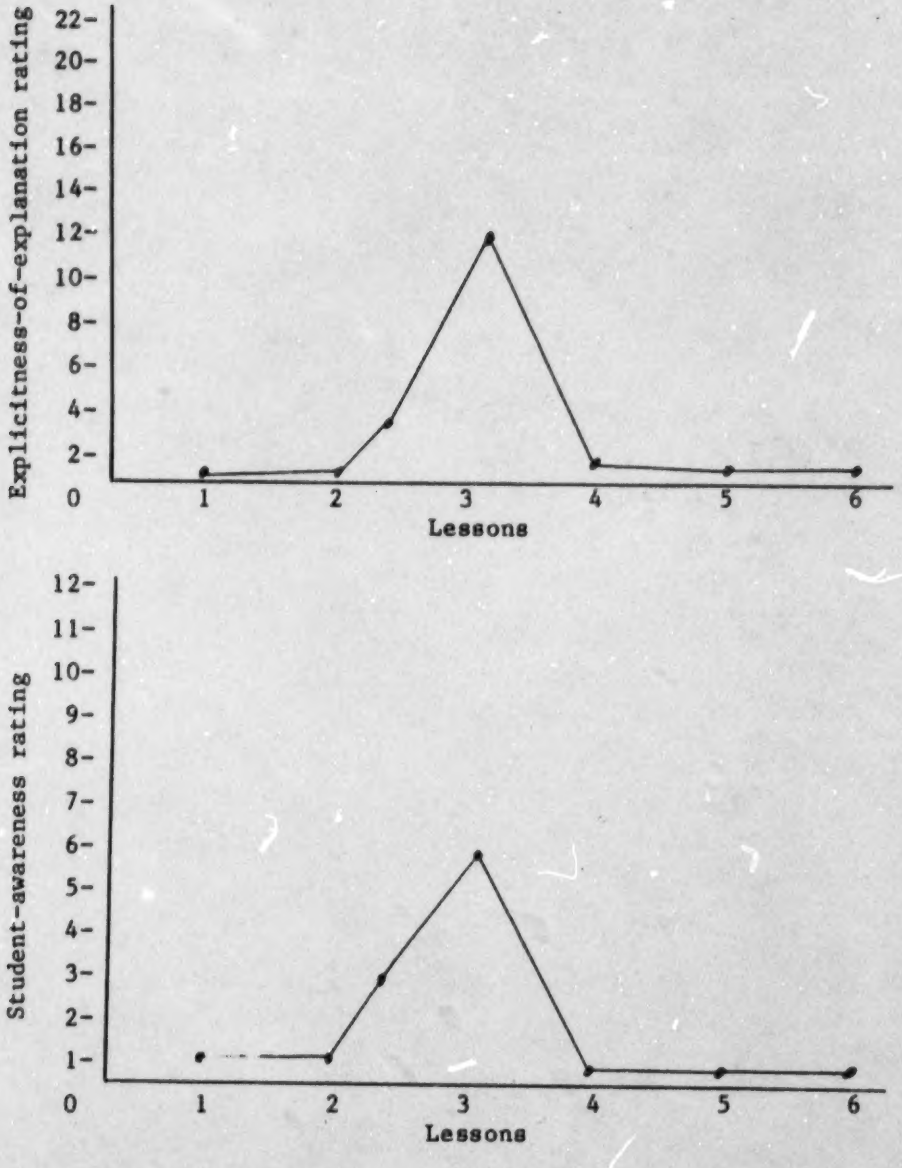

Figure 3. Teacher C's ratings for explicitness of explanation and student awareness.

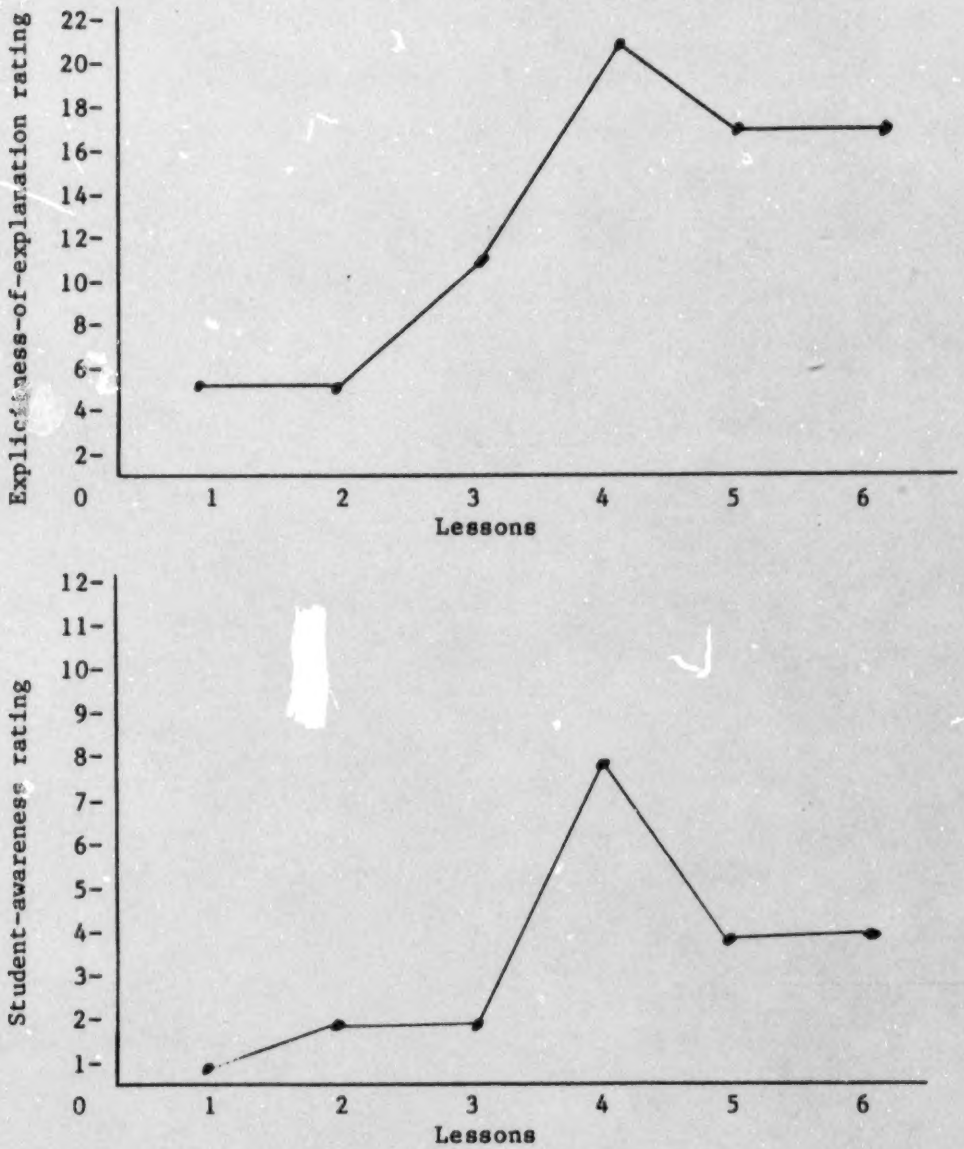

Figure 4. Teacher D's ratings for explicitness of explanation and student awareness.

Table 1

Means and Standard Deviations for the Dependent Variables in the MANOVA

	Woodcock Pretest		Average Awareness Score		Woodcock Posttest	
	mean	S.D.	mean	S.D.	mean	S.D.
Teacher A (n=4)	3.0	.566	2.225	1.179	3.625	.310
Teacher B (n=4)	3.45	.191	7.575	.287	4.525	.236
Teacher C (n=4)	3.2	.497	1.925	1.072	3.6	.606
Teacher D (n=4)	1.225	.096	2.75	1.475	2.10	.183

hypothesis that Teacher B's explicit explanations were a significant factor in increasing student awareness and, ultimately, their achievement seems plausible enough to justify a more extensive and precise study of the relationship between teacher explanation, student awareness and student achievement.

Qualitative Findings

The quantitative analysis indicated that Teacher B's students received significantly higher awareness ratings, and that in comparison with at least one other teacher's students, these ratings appear to be related to achievement. Since it seems reasonable to assume that the success of Teacher B's students is related to the fact that Teacher B had the highest ratings for explicitness of explanation (and that these explanations created greater awareness and, ultimately, greater achievement), a qualitative analysis of Teacher B's verbal explanation was conducted. Six findings about the characteristics of his instruction emerged.

The first related to management. As a matter of routine, each observer rated each lesson in terms of the attentiveness of the group during instruction, the number of distractions or interruptions, the students' attitude during the lesson and the teacher's control of the organizational and time-on-task variables. Teacher B consistently received high observer ratings for classroom management. He had few interruptions, he was well organized, and his students were on task most of the time. In contrast, Teacher C consistently received low observer ratings for classroom management. His instruction was characterized by frequent interruptions, student inattention, lack of organized action, and negative student affect. There is little evidence of explanation in transcripts of Teacher C's lessons because virtually all his verbal communication was directed to management. In contrast, Teacher B had management under control and was free to devote his verbal communication to explanation.

The second characteristic relates to Teacher B's ability to reorder the format of the basal lesson, explaining the skill first, using turn-taking patterns to practice it, and then applying the learned skill in a basal story. In contrast, Teacher A seldom departed from the pattern of having pupils first read the basal story aloud, and then, in an isolated and unrelated way, completing a skill lesson in which no reference was made to the story just completed or any other connected text. This tendency is seen in her introduction to a lesson on similies (Lesson 3). She said:

> Alright, we are finished with the first thing we were going to do. We were going to talk about the story and discuss it. We've done that. Now I'd like you to close your books. We're going to think about something that will help you in writing stories.

It apparently never occurred to Teacher A that the two activities could be related. Similarly, she seldom provided explanatory information, and she almost exclusively limited interaction to a turn-taking format. Despite the five interventions and some indication in Lessons 3 and 4 that she was using sustained teacher talk to make her instruction more explicit, she reverted in Lessons 5 and 6 to a straight turn-taking model in which no explanation or modeling was provided. The following excerpt from Lesson 6 (on finding the main idea) is typical:

T:[3] Alright, now here are some possibilities (for a story title). "A Trip Downtown," "The New Shirt," "The Shirt That Didn't Fit." Let me read them again: "A Trip Downtown," "The New Shirt," "The Shirt That Didn't Fit." Now of those three possibilities, which one would go best? Annie?

S: "A Trip Downtown."

S: "A Trip Downtown."

T: Okay. Tim, what do you think?

S: "The New Shirt."

---

[3]"T" stands for teacher, and "S" stands for student.

T: Don, what was your choice?

S: "The New Shirt."

T: Sharon, how about you?

S: "The New Shirt."

T: I think the girls decided on "The Trip Downtown" and the boys liked "The New Shirt." Mainly, what was the story about?

S: A trip downtown.

S: Getting a new shirt.

T: Getting a new shirt, wasn't it?

Teacher B, in contrast, never again reverted to the standard turn-taking format for conducting instruction after the first lesson. Instead, at the beginning of each lesson, he clearly explained what was being taught, moving to a turn-taking pattern only after students began to demonstrate understanding of how to do the skill. In all of his lessons, Teacher B first taught a skill, then provided practice, and finally talked about how to apply the skill to stories in the basal textbook, thereby bringing a sense of internal flow to the instructional sequence.

Third, Teacher B's explanation seemed to be more explicit because he stated why it was useful to learn each skill, a characteristic similar to Lipson's (Note 3) "why bother" element. For instance, when Teacher B talked to his students about learning an inferencing skill (Lesson 6), he said,

> I want you to underline some of the key words that you need to pay attention to and again, when I do it here, it is for the purpose that when you get back to your own reading, whether you are reading a textbook or some fun reading or a newspaper, you are able to pick out these clues yourself.

While Teacher B routinely presented skills within the context of how children would use them in real reading, Teacher A seldom made any attempt to justify the value of a skill. When asked what she hoped the ultimate outcome of a

skill lesson would be, she typically answered, "I would hope that they would be able to do the workbook page successfully."

A fourth characteristic of explicit explanation relates to the specificity of the teacher's instructional talk. The more specific the teacher is, the more explicit instruction becomes, and the more aware pupils are of what they are learning and how they can do it. For instance, note what Teacher B said when he opened a lesson on inferencing:

> Today we are again studying something about comprehension, a comprehension skill of being able to read clues in a paragraph and make a reasonable guess of what is going to happen next--what the author has in mind. Okay, let me say that again. Today we are working on a skill that involves paying attention to what you are reading. We call them clues that help you get what is going to happen before you read. They call that making inferences, based on the information that you have.

Teacher A, in contrast, opened a lesson on syllables by saying, "Today we are going to learn about syllables." During the remainder of the lesson, she made no overt attempt to explicate the lesson beyond this statement.

Specificity was not only important at the beginning of a lesson, but during it. Teacher A, in teaching a lesson on making short sentences longer (Lesson 4), highlighted the underlining of verbs and nouns, but was not specific about why this was important or helpful. Neither did she specify the thinking one does about nouns and verbs in order to expand sentences. The following responses are typical of those given by her students in an interview following the lesson:

I:[4] Okay, and how do you make a short sentence a little longer?

S: Well, you add a couple more words that you think would sound good with the sentence, and then you have a longer sentence.

I: Okay. Did the teacher give you some steps to follow when you were doing that?

S: What do you mean, like steps?

---

[4]"I" stands for interviewer, and "S" stands for student.

I: Well, like, when she was teaching you how to make short sentences into longer sentences, did she give you some steps to follow?

S: You mean, like how to do it?

I: Un-huh.

S: Like you could circle and underline.

I: Okay, once you have the word circled or underlined, then what do you do?

S: Then you just add some words and that makes a longer sentence.

In contrast, such vagueness was not associated with the pupil interview responses of the students in Teacher B's low group, perhaps because of the specificity of his explanations throughout the lesson. Note, for example, the specificity of the modeling he provided in a lesson on diphthongs (Lesson 3):

> Okay, let me tell you how I would do this if I were reading along. Let's suppose I was reading along and I came to the word "out" and I had never seen the word before, which is really possible. I see an "ou" and I know "ou" has the sound of *ow*, like Gracie said. It sounds like a "w" is in there--owwww--and I know it has a "t" at the end, and the t sounds like a t-t-t so I have ou-t, out.

Apparently as a result of such specificity, student interview responses were like the following:

I: Why do you suppose you were learning this skill?

S: So it could help you decode words with "ou" in it.

I: How do you use the "ou" to decode words?

S: First we figure out the "ou" and what it sounds like. Ow, like in loud. I'd go l-ou-d, loud.

Fifth, it apparently is not only important that explanations be specific; they should also be consistent. For instance, Teacher B's talk pattern in lesson after lesson reflected a continual return to the theme of the lesson: He reviewed and elaborated in a consistent, almost redundant, pattern. In contrast, Teacher A's talk pattern is less consistent. She often emphasized different things from minute to minute, was sometimes distracted from the

salient features of the task, and, once something had been said, she rarely came back to it.

The sixth and final component of explicit instruction related to the teacher's ability to provide elaborative explanation during turn-taking sessions. This is particularly important because each student processes the teacher's initial explanation in terms of his/her unique prior knowledge. This restructuring becomes evident when students respond to their teacher's questions. If students process their teacher's initial explanation in a way that helps improve their reading ability, the teacher should respond with reinforcement; if they restructure the explanation in a way harmful to their improved reading ability, however, the teacher must provide appropriate explanatory feedback. The differences between Teacher A and Teacher B in this regard were dramatic. Teacher A provided little explanatory feedback when confronted with misunderstandings during turn taking. The following example from a lesson on apostrophes (Lesson 5) is illustrative:

T: When you add an apostrophe "s" to boy, it shows that the boy has something. Can you make up a sentence for kittens? Something belongs to the kittens.

S: There's a basket full of kittens.

T: That's what Jennie was doing over here. You added just an "s." That's more than one kitten. This time make it ownership. Something belongs to this right here. Troy?

S: The kitten always owns the basket.

T: Alright, but can you change your sentence around? You're saying the kitten owns the basket. Let's use kitten and basket.

S: Kitten basket.

T: But with the apostrophe "s."

S: The kitten's basket.

T: The kitten's, that's the kitten's basket. Alright. What belongs to the kitten, Troy?

S: The basket.

T: The basket. Alright, let's try it with dolphins.

In contrast, during a lesson on connector words (Lesson 5), Teacher B discovered that his low-group students had restructured his explanation to mean that the connection is between words rather than between ideas. He responded as follows:

T: Connector words are what, David?

S: Two words put together.

T: What are connector words, Josh?

S: Two words hooked together.

T: They are not two words. Maybe I explained that incorrectly. A connector word is a word that connects one or more ideas. Okay, in this sentence, "They always walk to school together, and they always walk home together." Now in this sentence there are two ideas: They always walk to school, and they always come home. Of the four connector words I put on the board, which word is connecting the two ideas, David?

S: And.

T: And. Do you see that? And. I have it underlined here. See how it is connecting the ideas of walking to school together and coming home together? It is sort of like a bridge that connects these two. Bridges connect different places, words connect ideas. Connector words connect ideas.

Note that Teacher B provided an example, highlighted the role of the connector in the example and supplied an analogy for understanding the function of connectors. He responded to student restructuring with a spontaneously created supplementary explanation.

Discussion

No firm conclusions or generalizations can be based on case studies of four teachers. However, the findings do indicate that there is merit in pursuing the hypothesis that explicit teacher explanation produces greater student awareness, which, in turn, stimulates increased achievement.

Consequently, we are conducting an experiment involving 11 teachers who have received training in providing explicit explanation and 11 teachers who have not received such training.

In addition, however, this pilot study raises four issues for consideration by reading researchers.

First, the important role played by classroom management needs to be systematically considered in studies of instruction. In our study, this point was illustrated by Teacher C. Despite more than 15 years of elementary school teaching experience and an advanced graduate degree, Teacher C was unable or unwilling to control his students and, as a result, his attention was devoted to discipline, not to explanations. Teachers A, B, and D had and used effective classroom management skills and were able to implement explanation techniques to one extent or another because they were free to concentrate on that aspect of pedagogy.

Second, researchers should begin to look at outcome measures in reading other than achievement on tests. The growth of interest in cognitive processing, the increasing importance of metacognition, and the growing understanding that students mediate the instruction they receive all argue for the importance of monitoring pupil awareness as an outcome. It is possible, as is suggested in the pilot study reported here, that increased student awareness is linked to greater academic achievement.

Third, researchers need to reconsider the teacher's role as a supplier of information. While it is true that bringing students together with instructional materials, insuring student on-task engagement, using certain prepackaged scripts and/or strategies, monitoring performance, and providing appropriate feedback are all important instructional responsibilities, the essence of teaching occurs when teachers, by talking to students about what is

being learned, provide information that rearranges the students' cognitive structures and creates a flash of understanding or (more likely) a gradual realization of how to do something they formerly had been unable to do. In the absence of such new information, the students' cognitive structures are liable to remain unchanged. Little is known about what goes into such explanations. However, this pilot study suggests that teachers can learn to improve in giving information, and that the more explicit teachers' explanations are, the more aware students seem to become of what they are learning and why.

Finally, the qualitative findings from this study illustrate that teacher explanation is not a variable that can be developed by giving teachers a procedure or sequence of steps to be followed. While there was a sequence to what Teacher B did, the elements that characterized his explanations went well beyond technical procedures. Rather, Teacher B seemed to possess a mental structure, a sense of cohesion and of meaningfulness that guided what he said to his students; the locus of control was what he understood he was doing rather than what he was directed to do by a script or teacher's guide. Researchers need to identify these components as a first step in determining whether they can help other teachers incorporate such characteristics into their teaching.

Conclusion

At a time when there is more and more concern about the instructional inadequacies of teachers, the contextual pressures exerted upon them, and their inability to bring spontaneity and independent decision making to the classroom, educators are often tempted to create more comprehensive teacher's guides and more technical manuals to direct and control instruction. However, the heart of teaching reading remains the verbal interaction between teacher

and learner and the teacher's ability to use this interaction to create in students' heads cognitive structures that help them control the act of reading. The ability to use this verbal interaction to create understanding and illumination requires spontaneous as well as planned explanations. Researchers must learn more about how teachers create such explanations.

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Appendix A

Explicitness-of-Explanation Rating Form

Teacher Code No. _____

Rater _____

Date of Rating _____

Summary Ratings

TEACHER EXPLANATION

Comments

Part I — Information Presented

1. describes mental process _____
2. states usefulness _____
3. describes features _____
4. states sequence _____
5. example _____

Part II - Means for Making Clear

1. modeling _____
2. directing attention _____
3. feedback and/or elaboration _____
4. review _____
5. practice _____
6. application _____

Total score: _____

Appendix B

Student-Awareness Rating Form

Teacher Code No. _____

Rater _____

Date of Rating _____

Summary Ratings (by student)
for
PUPIL AWARENESS

	Comments
Student #1 _____ (name) 1. what _____ 2. why _____ 3. how _____ Total: _____	
Student #2 _____ (name) 1. what _____ 2. why _____ 3. how _____ Total: _____	
Student #3 _____ (name) 1. what _____ 2. why _____ 3. how _____ Total: _____	
Student #4 _____ (name) 1. what _____ 2. why _____ 3. how _____ Total: _____	
Student #5 _____ (name) 1. what _____ 2. why _____ 3. how _____ Total: _____	